

Chitons (Mollusca, Polyplacophora) procured by the MUSORSTOM 3, Philippines expedition (1985)

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ABSTRACT

During the MUSORSTOM 3, Philippines Expedition (1985), eight species of chitons have been collected, of which 5 had not been found by the MUSORSTOM 1 (1976) or 2 (1980) cruises. Two new species are

present, viz. *Lepidozona ferreirai* Kaas & Van Belle, 1987 (described separately in "Monograph of Living Chitons", vol. 3) and *Chiton (Tegulaplastax) boucheti* sp. nov., the second species known in the subgenus.

RÉSUMÉ

Chitons (Mollusca Polyplacophora) récoltés aux Philippines pendant la campagne MUSORSTOM 3 (1985).

Huit espèces de Polyplacophores ont été récoltées au cours de la campagne MUSORSTOM 3 aux Philippines en 1985. Cinq d'entre elles n'avaient pas été

récoltées au cours des campagnes MUSORSTOM 1 (1976) et 2 (1980); deux espèces nouvelles sont présentes : *Lepidozona ferreirai* Kaas & van Belle, 1987 (décrit dans « Monograph of Living Chitons », vol. 3) et *Chiton (Tegulaplastax) boucheti* sp. nov., seconde espèce connue dans ce sous-genre.

KAAS, P., 1989. — Chitons (Mollusca, Polyplacophora, produced by MUSORSTOM 3, Philippines expedition (1985). In : J. FOREST (ed.), Résultats des Campagnes MUSORSTOM, Volume 4. *Mém. Mus. natn. Hist. nat.*, (A), 143 : 105-111, Paris ISBN : 2-85653-150-4

INTRODUCTION

During the third MUSORSTOM — Philippines Expedition, carried out by the R.V. "Coriolis" in the South China Sea and Central Philippines during the months of May-June 1985 (FOREST, 1988), 47 specimens of chitons were procured, representing 8 species. Apart from 5 species of *Leptochiton*, 3 of which had been found during the MUSORSTOM I (1976) and 2 (1980) cruises, one species of *Lepidozozona*, one species of *Chiton*

(*Tegulaplex*) and one species of *Notoplax* were collected by Dr P. BOUCHET and Ms M. P. TRICLOT, who took part in the expedition. I have to thank Dr BOUCHET, curator of Mollusca at the Muséum national d'Histoire naturelle, Paris, for kindly putting the material at my disposal. All specimens are stored in the collections of that institution.

SYSTEMATICS

Ordo Neoloricata

Subordo Lepidopleurina

*LEPTOCHITONIDAE**Leptochiton* Gray, 1847*Leptochiton helknapi* Dall, 1878

Leptochiton belknapi Dall, 1878 : 1.

L. belknapi : KAAS & VAN BELLE, 1987 : 23 (synonymy, chresonymy), fig. 10.

MATERIAL

Stn CP122, 12°20' N, 121°42' E, 673-675 m, 4.vi.1985, 1 spm; stn CP128, 11°50' N, 121°42' E, 815-821 m, 5.vi.1985, 2 spms.

Leptochiton rissoi (Nierstrasz, 1905)

Lepidopleurus rissoi Nierstrasz, 1905 : 6, pl. 1 fig. 5, pl. 2 fig. 52, pl. 3 figs 53-55.

Leptochiton rissoi : KAAS & VAN BELLE 1985 : 110 (chresonymy), fig. 48, map 24.

MATERIAL

Stn CP106, 13°47' N, 120°30' E, 640-668 m, 2.vi.1985, 1 spm; stn CP124, 12°02' N, 121°35' E,

120-123 m, 4.vi.1985, 1 spm; stn CP128, 11°50' N, 121°42' E, 815-821 m, 5.vi.1985, 1 spm; stn CP143, 11°29' N, 124°11' E, 205-214 m, 7.vi.1985, 1 spm.

Leptochiton lineatus (Nierstrasz, 1905)

Lepidopleurus lineatus Nierstrasz, 1905 : 8, pl. 1 fig. 4, pl. 2 figs 48-51.

Leptochiton lineatus : KAAS, 1982 : 87.

Lepidopleurus belknapioides Leloup, 1981 : 317, fig. 1, pl. 1 figs 1-3.

Leptochiton lineatus : KAAS & VAN BELLE 1985 : 113 (chresonymy), fig. 49, maps 22, 44.

MATERIAL

Stn CP106, 13°47' N, 120°30' E, 640-668 m, 2.vi.1985, 1 spm; stn CP118, 11°58' N, 121°06' E, 448-466 m, 3.vi.1985, 1 spm; stn CP119, 11°59' N, 121°13' E, 320-337 m, 3.vi.1985, 1 spm; stn CP120, 12°06' N, 121°15' E, 219-220 m, 3.vi.1985, 1 spm; stn CP123, 12°10' N, 121°45' E, 700-702 m, 4.vi.1985, 1 juv. spm; stn CP125, 11°57' N, 121°28' E, 388-404 m, 4.vi.1985, 3 spms; stn CP127, 11°48' N, 121°30' E, 464-475 m, 4.vi.1985, 3 spms (2 juv.); stn CP128, 11°50' N, 121°42' E, 815-821 m, 5.vi.1985, 4 spms; stn CP135, 11°

58' N, 122°02' E, 486-551 m, 5.vi.1985, 1 spm;
stn CP138, 11°54' N, 122°15' E, 252-370 m, 6.
vi.1985, 1 spm.

***Leptochiton foresti* (Leloup, 1981)**

Lepidopleura (sic!) *foresti* Leloup, 1981 : 321, fig. 2,
pl. 2 figs 7-10.

Leptochiton foresti : Kaas 1982 : 88.

Leptochiton foresti : Kaas & Van Belle 1985 : 122, fig.
54, map 44.

MATERIAL

Stn CP88, 14°01' N, 120°17' E, 183-187 m,
31.v.1985, 4 spms; stn CP101, 14°00' N, 120°
19' E, 194-196 m, 1.vi.1985, 2 spms; stn CP108,
14°01' N, 120°18' E, 188-195 m, 2.vi.1985, 4 spms;

stn CP112, 14°00' N, 120°18' E, 187-199 m, 2.
vi.1985, 1 spm, rose coloured; stn CP120,
12°06' N, 121°15' E, 219-220 m, 3.vi.1985, 2 spms;
stn CP125, 11°57' N, 121°28' E, 388-404 m, 4.
vi.1985, 2 spms; stn CP139, 11°53' N, 122°14' E,
240-267 m, 6.vi.1985, 4 spms.

***Leptochiton cancelloides* Kaas, 1982**

Leptochiton cancelloides Kaas, 1982 : 89, figs 1-13.
Leptochiton cancelloides : Kaas & Van Belle 1985 :
132, fig. 59, map. 44.

MATERIAL

Stn CP100, 14°00' N, 120°18' E, 189-199 m,
1.vi.1985, 1 spm.

Subordo Ischnochitonina

ISCHNOCHITONIDAE

***Lepidozona* Pilsbry, 1892**

***Lepidozona ferreirai* Kaas & Van Belle, 1987**
(Figs 1-5)

Lepidozona ferreirai Kaas & Van Belle, 1987 : 252,
fig. 114, map 35.

MATERIAL

Stn DR126, 11°49' N, 121°22' E, 266 m, 4.
vi.1985, 1 spm, now disarticulated (holotype).

CHITONIDAE

***Chiton* Linnaeus, 1758**

(*Tegulaplex*) Iredale & Hull, 1926

***Chiton (Tegulaplex) boucheti* sp. nov.**
(Figs 6-15)

MATERIAL

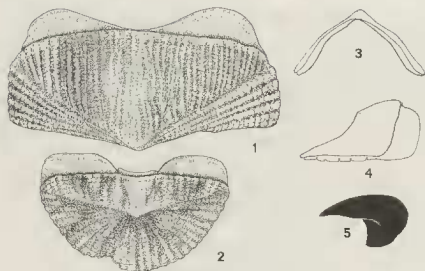
Stn DR117, 12°31' N, 120°39' E, 92-97 m,
3.vi.1985, 1 spm, (holotype), now disarticulated.

DIAGNOSIS

Animal small, c. 9 × 4.5 mm, elongate oval,
moderately elevated (dorsal elevation 0.48), car-
inated, side slopes little convex, lateral areas
somewhat raised, with two rows of tubercles, one
along the diagonal ridge, the other accompanying
the posterior margin. Central areas longitudinally
grooved, c. 10 grooves on either side of the
smooth jugum. Colour of tegmentum light
purple to roseate, with a few white spots in the
jugal part of the intermediate valves, and striking
white diagonal ridges in valve II, valve VIII with
a posterior white triangle.

DESCRIPTION

Head valve semicircular, with some nine weak
radial depressions and rather close set concentric
undulations, which are hardly elevated, anterior
slope concave towards the apex. Intermediate
valves rectangular, anteriorly forwardly pro-
duced in the middle, posterior margin almost
straight, except for a small beak, the sides rather
abruptly truncated. Lateral areas moderately
raised, separated from the central area by a
nodulose rib, a similar rib accompanying the
posterior margin; the nodules corresponding



1-2, *Lepidozона ferretai* Kaas & Van Belle, 1987. (holotype).

1, valve IV, dorsal view, $\times 20$; 2, valve VIII, dorsal view, $\times 20$; 3, camera lucida sketch of valve IV, rostral view, $\times 9.6$; 4, do, lateral view of valve VIII, $\times 20$; 5, dental cap of major lateral radula tooth, $\times 200$.

with the longitudinal, shallow grooves on the central area, about ten on either side of the smooth back, becoming obsolete towards the jugum. Tail valve more than twice as wide as long, with a slightly posterior, blunt mucro, posterior slope steep, deeply concave. Antemucronal area sculptured like the central areas, postmucronal area with a few concentric undulations; both areas separated by a nodulose rib.

Articulamentum thin, the purple colour of the tegmentum shining through. Apophyses thin, forming an almost straight line anteriorly on both sides of the forwardly produced tegmentum; there is practically no sinus, except in valve VIII, which has trapezoid apophyses, connected by a narrow sutural plate, weakly notched at the sides, as in *Lepidozона*. Insertion teeth rather short, very finely denticulated, with 9 slits in the head valve, 1-1 in the intermediate valves, and c. 10 in the tail valve, the slit rays rather indistinct.

Girdle closely beset with small, imbricating, strongly bent, oval scales, rounded at the top, ornamented with 12-13 strong ribs, somewhat

converging towards the top, the base emarginate, $140 \times 90 \mu\text{m}$ on mid-girdle, smaller towards the outer margin. Ventrally the girdle is clothed with transverse rows of elongate scales, distally bluntly pointed, $72 \times 16 \mu\text{m}$.

Radula with a very small and narrow, spoon-shaped central tooth, with a small blade, $44 \mu\text{m}$ long, the blade $20 \mu\text{m}$ broad. First lateral tooth narrow, elongate, distally a little widening, tube-shaped, on the outer side with a narrow wing. Major laterals with a broad head, the cutting edge bluntly rounded, non-cuspidate, the shaft without a trunklike appendix on the inner side.

OBSERVATIONS

This new species is much alike *C. (Tegulaplex) hululensis* (Smith, 1903), from which it differs, however, in the longitudinally grooved central areas and in the jugal sinus of the valves, which is rather deep in *hululensis*, shallow to practically nil in *boucheti*.



6-15. *Chiton (Tegulaplex) bouchei* sp. nov. (holotype).

6, valve I, dorsal view, $\times 19$; 7, valve VI, dorsal view, $\times 19$; 8, valve VIII, dorsal view, $\times 19$; 9, camera lucida sketch of valve VI, rostral view, $\times 9$; 10, do, valve VIII, lateral view, $\times 19$; 11, dorsal girdle scale near to the outer margin, $\times 187.5$; 12, scales from mid-girdle, a dorsal, b ventral view, $\times 187.5$; 13, ventral girdle scale, $\times 187.5$; 14, central and first lateral radula teeth, $\times 375$; 15, dental cap of major lateral tooth, $\times 375$.

Subordo Acanthochitonina

ACANTHOCHITONIDAE

Notoplax H. Adams, 1861

(*Spongiochiton*) Dall, 1882

Notoplax (Spongiochiton) producta
(Carpenter in Pilsbry, 1892)

Spongiochiton productus Carpenter in Pilsbry, 1892 :
26.

Acanthochites (Notoplax) carpenteri Pilsbry, 1893 : 35,
pl. 1 figs 14-22.

Acanthochites (Notoplax) involutus Carpenter in Pilsbry,
1893 : 35, pl. 1 figs 27-35.

Craspedochiton liberiensis Thiele, 1909 : 33, pl. 4
figs 29-35.

Notoplax foresti Leloup, 1965 : 155, pls 1, 2, text
figs 1-3.

Notoplax (Spongiochiton) productus : Kaas, 1986 : 20.

MATERIAL

Stn DR117, 12°31' N, 120°39' E, 92-97 m,
3.vi.1985, 1 spm.

CONCLUDING REMARKS

The three MUSORSTOM expeditions hitherto of Polyplacophora, as summarized in the table :
carried out in the Philippines collected 10 species

	MUSORSTOM Expeditions			depth range (m)	
	1 (1976)	2 (1980)	3 (1985)		
<i>Leptochiton belknapi</i> Dall, 1878			3	670-820	
<i>Leptochiton rissoi</i> (Nierstrasz, 1905)			4	120-820	
<i>Leptochiton lineatus</i> (Nierstrasz, 1905)	2 L	32 K	17	220-820	= <i>Lepidopleurus belknapioides</i> Leloup, 1981
<i>Leptochiton foresti</i> (Leloup, 1981)	18 + v L	6 K	19	130-400	
<i>Leptochiton juvenis</i> (Leloup, 1981)	2 L	4 K		95-200	
<i>Leptochiton philippinus</i> (Leloup, 1981)	3 + v L	9 K		175-1660	= <i>Lepidopleurus porosus</i> Leloup, 1981
<i>Leptochiton cancelloides</i> Kaas, 1982		2 K	1	130-200	
<i>Lepidozona ferretal</i> Kaas & Van Belle, 1987			1	270	
<i>Chiton boucheti</i> sp. nov.			1	95	
<i>Notoplax producta</i> (Carpenter in Pilsbry, 1892)			1	95	

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